

## **Wheat straw plastics: The development of petrochemical additives using agricultural fibers**

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Fiber filled plastics can have a substantial future role in two distinct markets, the wood industry and the plastic industry. Over the 20-year period ending in 1994, the world population increased 40 percent. In that same time period, global consumption of wood increased 37% and global consumption of plastic increased 194%. These increases will lead to new market developments. There is a great potential to increase the production of wood through untapped resources and tree plantations. However, there are opposing political demands. Specifically, concern about the state of the world's forests and diminishing animal habitat is creating mounting political pressure to decrease harvests. Composites made from wood and plastic are finding their way into the wood market. For example, the decking industry is a \$3 billion per year industry and non-wood materials, including Trex and TimberTech (wood/plastic materials) make up 3% of that market.

On the other hand, the plastics market is highly dependent upon the price of petroleum. Currently we enjoy low oil prices and correspondingly low plastic prices. However, with the US importing over 50 billion barrels of oil per day from OPEC nations, petroleum costs are tied to world politics. In addition, there is a growing recognition that petroleum is a finite resource. The worldwide filler market is \$23 billion annually, 21% of those fillers are used in the plastics industry, and the plastics industry is growing at about 6% annually. By replacing mineral fillers, agricultural fibers will play an increasingly significant role in both the wood and plastic industries.